

Demonstration of a Hyperspectral Microwave Receiver Subsystem

Completed Technology Project (2012 - 2015)



Project Introduction

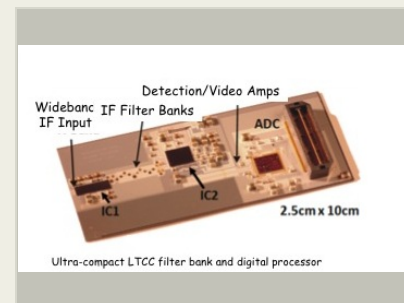
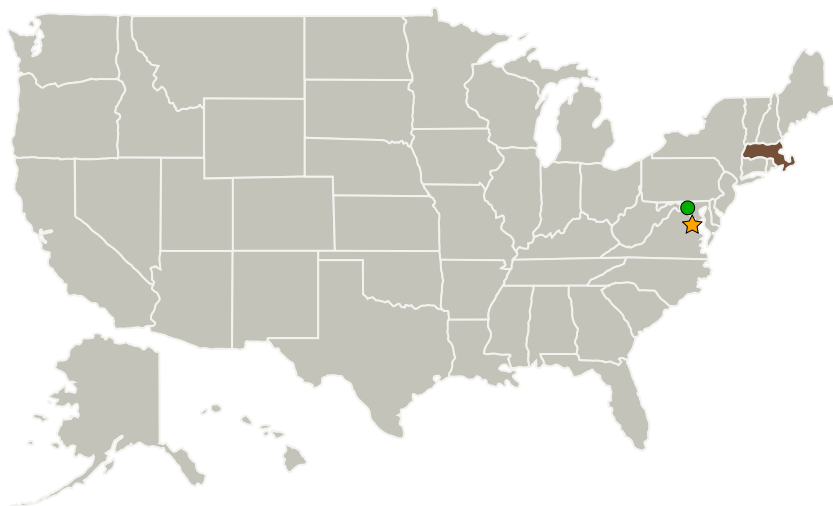
Develop and demonstrate a new hyperspectral microwave receiver subsystem to support future atmospheric sounding missions such as PATH.

Achieve an all-weather sounding capability through broadband 118 and 183 GHz receiver subsystems.

Core technology effort is an ultra-compact ($<100\text{cm}^3$, 500g) IF processor module enabling hyperspectral sensing within the mass/volume envelope of current systems.

The proposed IF technology, together with recent RF advancements, would enable smaller sensors with greater reliability, launch opportunities, and performance.

Primary U.S. Work Locations and Key Partners



Project Image Demonstration of a Hyperspectral Microwave Receiver Subsystem

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Organizational Responsibility

Responsible Mission Directorate:

Science Mission Directorate (SMD)

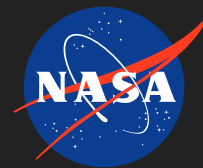
Lead Center / Facility:

NASA Headquarters (HQ)

Responsible Program:

Earth Science

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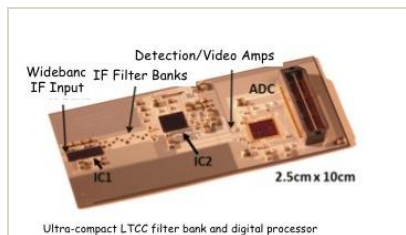
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Organizations Performing Work	Role	Type	Location
★ NASA Headquarters(HQ)	Lead Organization	NASA Center	Washington, District of Columbia
● Goddard Space Flight Center(GSFC)	Supporting Organization	NASA Center	Greenbelt, Maryland
Massachusetts Institute of Technology Lincoln Laboratory(MIT-LL)	Supporting Organization	R&D Center	Lexington, Massachusetts

Primary U.S. Work Locations

Massachusetts

Images

**10470-1359996389819.jpg**

Project Image Demonstration of a Hyperspectral Microwave Receiver Subsystem
(<https://techport.nasa.gov/image/1570>)

Project Management

Program Director:

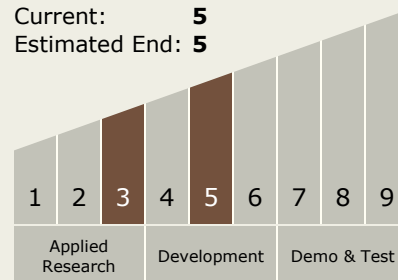
George J Komar

Principal Investigator:

William C Blackwell

Technology Maturity (TRL)

Start: **3**
Current: **5**
Estimated End: **5**



Technology Areas

Primary:

- TX05 Communications, Navigation, and Orbital Debris Tracking and Characterization Systems
 - TX05.5 Revolutionary Communications Technologies
 - TX05.5.2 Quantum Communications

Target Destination

Earth